M. Ross Alexander

Assistant Operation Research Analyst
Decision and Infrastructure Sciences Division
Argonne National Laboratory
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Updated: 01/19/2021

Education

Ph.D. in Natural Resources **2017**

University of Arizona, Tucson, AZ
Laboratory of Tree-Ring Research
School of Natural Resources and the Environment
Dissertation: Determining the role of stand structure in shaping climate-growth relationships in eastern temperate forests of the US.

M.S. in Earth and Quaternary Sciences **2012**

Indiana State University, Terre Haute, IN.
Thesis: Dynamics of Coarse Woody Debris on the Forest Floor in the Eastern Deciduous Forest in Indiana.

B.A. in Biology and Chemistry, *cum laude* **2010**

Hanover College, Hanover Indiana
Bachelor of Arts, Majors: Biology and Chemistry
Biology Thesis: Residence Time of Coarse Woody Debris on the Forest Floor in Southeastern Indiana Forests.
Chemistry Thesis: Analysis of Elemental Concentrations of CWD via ICP-OES Spectroscopy.

Professional Experience

Scientist at Large **Aug. 2021—Present**
University of Chicago Consortium for Advanced Science and Engineering, Chicago, IL.

Assistant Operation Research Analyst **Mar. 2020—Present**
Decision and Infrastructure Sciences Division, Argonne National Laboratory, Lemont, IL

- Works with theoreticians, practitioners, and stake holders to meet multiple differential objectives and identify actionable solutions to complex problems**.**

Oak Ecosystem Recovery Program Coordinator **Feb. 2019—March 2020**
Chicago Region Trees Initiative, The Morton Arboretum, Midwest Dendro, LLC

- Subcontractor to coordinate among land owners, local and state organizations, and private entities to carry out the steps in the Oak Ecosystem Recovery Plan to increase oak conservation in the Chicago Wilderness Region.
- Connect landowners with opportunities and resources to improve oak habitat on their property

Data and Research Scientist **May 2018—Mar 2020**
Midwest Dendro, LLC

- Conduct forest ecology research in the Midwest United States investigating dynamics of old-growth forests through forest ecology, dendrochronology and archaeology methods.

Dendrochronology Researcher **April 2017 – Nov. 2017**
Harvard Forest, Petersham, MA

- Use dendrochronology (tree-ring) techniques to precisely measure annual growth of hardwood and conifer trees from the New England region
- Conduct climate-response analysis of New England tree species in the R programming language
- Perform miscellaneous data management and statistical analyses.

Research Specialist **January – March 2017**
Laboratory of Tree-Ring Research, The University of Arizona, Tucson, AZ

- Curate field collections for pest and pathogen analyses
- Assign dates and measure individual tree rings for dendrochronology analysis of increment cores from the Southwestern United States

Research Assistant **2012 - 2016**

Laboratory of Tree-Ring Research, The University of Arizona, Tucson, AZ

- Planned and conducted field sampling, sample preparation, precise dating, and data analysis to reconstruct standing forest biomass from 13 individual sites for Department of Energy Regional and Global Climate Modeling Program
- Data analysis using the dendrochronology program suite and R programming language
- Prepared samples for $\delta^{13}C$ isotopic analysis of cellulose

Field and Laboratory Technician **2008 - 2010**

Department of Biology, Hanover College, Hanover, IN

- Collected, prepared, dated, and measured tree ring samples from archaeological sites, downed woody debris, and living trees
- Species identification using wood anatomical features.

Field researcher and citizen science coordinator **Summer 2008**
Central Muscatatuck Watershed Project, Madison, Indiana.

- Performed colorimetric water quality assessment in waterways and headwater streams in Southeastern Indiana measuring dissolved oxygen, pH, and nitrate levels
- Conducted benthic macroinvertebrate surveys
- Coordinated with local project volunteers for citizen science efforts

Refereed Publications

Accepted/Published

Teets, A., Moore, D. J. P., **Alexander, M. R.**, Blanken, P. D., Bohrer, G., Burns, S. P., et al. 2022. Coupling of tree growth and photosynthetic carbon uptake across six North American forests. *Journal of Geophysical Research: Biogeosciences*, 127, e2021JG006690.

Margaret E K Evans, R Justin DeRose, Stefan Klesse, Martin P Girardin, Kelly A Heilman, **M Ross Alexander**, André Arsenault, Flurin Babst, Mathieu Bouchard, Sean M P Cahoon, Elizabeth M Campbell, Michael Dietze, Louis Duchesne, David C Frank, Courtney L Giebink, Armando Gómez-Guerrero, Genaro Gutiérrez García, Edward H Hogg, Juha Metsaranta, Clémentine Ols, Shelly A Rayback, Anya Reid, Martin Ricker, Paul G Schaberg, John D Shaw, Patrick F Sullivan, Sergio Armando Villela GaytÁn, 2022. Adding Tree Rings to North America's National Forest Inventories: An Essential Tool to Guide Drawdown of Atmospheric CO2, *BioScience*, 72(3), Pages 233–246.

Anderson-Teixeira, K. V. Herrmann, C.R. Rollinson, B. Gonzalez, E. Gonzalez-Akre, N. Pederson, **M.R. Alexander,** A.D. Allen, R. Alfaro Sanchez, T. Awada, J. Baltzer, P. Baker, J. Birch, P. Cherubini, S. Davies, C. Dow, R. Helcoski, J. Kaspar, J. Lutz, E. Margolis, J. Maxwell, S. McMahon, C. Piponiot, S. Russo, P. Samonil, A. Sniderhan, A. Tepley, I. Vasickova, M. Vlam, P. Zuidema. 2022 Joint effects of climate, tree size, and year on annual tree growth derived from tree-ring records of ten globally distributed forests. *Global Change Biology* 28(1), p. 245 - 266.

Rollinson, C.R., A. Finley, **M.R. Alexander**, S. Banerjee, K. Dixon Hamil, L.E. Koenig, D. H. Locke, M. Peterson, M.W. Tingley, K. Wheeler, C. Youngflesh, E.F. Zipkin. 2021. Working across space and time: nonstationarity in ecological research and application. *Frontiers in Ecology and The Environment* 19 (1), 66-72.

Rollinson, C.R., **M.R. Alexander,** A. Dye, D.J.P. Moore, N. Pederson, V. Trouet. 2021. Climate sensitivity of understory trees differs from overstory trees in temperate mesic forests. Ecology 102(3), e03264.

Zhang, J., X. Gou, **M.R. Alexander**, J. Xia, F. Wang, F. Zhang, Z. Man, N. Pederson. 2021. Drought limits wood production of *Juniperus przewalskii* even as growing seasons lengthens in a cold and arid environment. *Catena* 196, 104936.

Zhang, J., **M.R. Alexander**, X. Gou, A. Deslauriers, P. Fonti, F. Zhang, N. Pederson. 2020. Extended xylogenesis and stem biomass production in *Juniperus przewalskii* Kom. During extreme late-season climatic events. Annals of Forest Science 77, 99.

Mitra, B., S.A. Papuga, **M.R. Alexander**, T.L. Swetnam, N. Abramson. 2020. Allometric relationships of primary size measures to sapwood area for six common tree species in snow-dependent ecosystems. Journal of Forestry Research 31 (6), 2171-2180.

Alexander, M.R., J.K. Pearl, D.A. Bishop, E.R. Cook, K.J. Anchukaitis, N. Pederson. 2019. The potential to strengthen temperature reconstructions in ecoregions with limited tree line using a multi species approach. *Quaternary Research* 92(2), 583-597.

Kannenberg, S.A., K.A. Novick, **M.R. Alexander**, J.T. Maxwell, D.J.P. Moore, R.P. Phillips, W.R. Anderegg. 2019. Linking drought legacy effects across scales: From leaves to tree rings to ecosystems. *Global Change Biology* 25(9), 2978-2992.

Dye, A., **Alexander, M.R.**, Bishop, D., Druckenbrod, D., Pederson, N., Hessl, A. 2019. Size-growth asymmetry is not consistently related to productivity across an eastern U.S. temperate forest network. *Oecologia* 189(2) 515-528.

Alexander, M.R., C.R. Rollinson, D.J.P. Moore, J.H. Speer, D.L. Rubino. 2018. Determination of Death Dates of Coarse Woody Debris of Multiple Species in the Central hardwood Region (Indiana, USA). *Tree-Ring Research* 74(2): 135-143.

Alexander, M.R., C.R. Rollinson, F. Babst, V. Trouet, D.J.P. Moore. 2018. Uncertainty in tree-ring based biomass estimates does not alter growth-climate relationships. *Trees: Structure and Function* **32**(1), 265-276.

Montané, F., A.M. Fox, A.F. Arellano, N. MacBean, **M.R. Alexander**, A. Dye, D.A. Bishop, V. Trouet, F. Babst, A.E. Hessl, N. Pederson, P.D. Blanken, G. Bohrer, C.M. Gough, M.E. Litvak, K.A. Novick, R.P. Phillips, J.D. Wood, D.J.P. Moore. Evaluating the effect of alternative carbon allocation schemes in a land surface model (CLM4.5) on carbon fluxes, pools and turnover in temperate forests. 2017. *Geoscientific Model Development* **10**(9), 3499-3517.

Babst, F., **M.R. Alexander**, P. Szejner, O. Bouriaud, S. Klesse, J. Roden, P. Ciais, B. Poulter, D. Frank, D.J.P. Moore, V. Trouet. 2014. A tree-ring perspective on the terrestrial carbon cycle. *Oecologia* **176**(2), pp. 307-322.

Babst, F., O. Bouriaud, **M.R. Alexander**, V. Trouet, D. Frank. 2014. Towards consistent measurements of carbon accumulation: A multi-site assessment of biomass and basal area increment across Europe. *Dendrochronologia* **32**(2), pp.153-161.

Rosene, P.J., **M.R. Alexander,** J.H. Speer. 2012**.** Assessment of the SENCER Teaching Model at Indiana State University After Two Years. *Science Education and Civic Engagement: An International Journal.* Winter 2012.

Speer, J.H., **Alexander, M.R.**, Pettit, J.L., Whitaker, J., Flowers, S.C., Rosene, P.J., Lehman, A., and Kelley, A. 2012. The SENCER Teaching Model Applied to Sustainability to make STEM Education Engaging. *Greening of the Campus Conference Proceedings*. 11p.

Non-refereed Publications

Alexander, M.R., I. Hyde, C. Burdi, B. Smith, J. Bergerson, M. Riddle, C. Freeman, J. Hutchison. 2021 Internet Access Index: Measuring the Availability and Household Adoption of High-speed Internet. Argonne National Laboratory.

Alexander, M.R. 2017. Determining the role of stand structure in shaping climate-growth relationships in eastern temperate forests of the US. Doctoral Dissertation. The University of Arizona

Alexander, M.R., D.L. Rubino, J.H. Speer. 2012. Dynamics of Coarse Woody Debris on the Forest Floor in the Eastern Deciduous Forest in Indiana. Master's Thesis. Indiana State University.

Alexander, M.R., D.L. Rubino. 2010. Residence Time of Coarse Woody Debris on the Forest Floor in Southeastern Indiana Forests. Undergraduate Thesis. Hanover College.

Alexander, M.R., D.L. Rubino, C. Philipp 2010. Analysis of Elemental Concentrations of CWD via ICP-OES Spectroscopy. Undergraduate Thesis. Hanover College.

Alexander, M.R. 2008. Assessment of headwater habitats within the Central Muscatatuck watershed, South Eastern Indiana. Jefferson County Soil and Water Conservation District.

Competitive Grants Received

Establishing a historical baseline for modern forest vulnerability, Center for Tree Science, The Morton Arboretum, 2019. Primary Investigator. **$9,600**

Oak Ecosystems Recovery Fellowship, Center for Tree Science, The Morton Arboretum, 2018. Co-Investigator. **$8,000**.

Graduate and Professional Student Council, University of Arizona, Travel Award, 2013. **$500.**

Institute of the Environment, University of Arizona, Graduate Student Travel Award, 2013. **$500**.

Stable Isotope Ratio Facility for Ecological Research (SIRFER) Isocamp Scholarship, 2013 **$1,500**

North American Dendroecological Field Week Graduate Research Fellow, 2012. **$3,000.**

Indiana State University College of Graduate and Professional Studies Student Research Grant, 2011. Nutrient and Decay Dynamics of Coarse Woody Debris in Indiana Forests **$500**.

Indiana State University Earth and Environmental Systems Departmental Funds, 2011. **$300**.

Indiana State University Earth and Environmental Systems Departmental Funds, 2010. **$300**.

Rivers Institute at Hanover College Research Grant, 2010. Analysis of Elemental Concentrations in CWD via ICP-OES Spectroscopy. **$1500**.

Patricia Walne Research Grant, 2009. Residence Time of Coarse Woody Debris on the Forest Floor in Southeastern Indiana Forests. **$900**.

Rivers Institute at Hanover College Research Grant, 2008. Assessment of Headwater regions within the Central Muscatatuck Watershed. **$2,540.**

United States Fish and Wildlife Service, 2007. The Effect of Fire on Multiple Arboreal Species in the Eastern Deciduous Forest. J.H. Speer, D.L. Rubino, J.R. Robb. (Senior Technician). **$40,160**

Non-competitive Funding

Ball Horticulture Company. 2018. **$3,500**

Teaching and Advising

Research Faculty **Jan. 2018—April 2018**

Illinois Mathematics and Science Academy, Aurora, IL

- Mentor top math & science students from across Illinois

Forest Ecology Laboratory Assistant **Summer 2017**

Summer Research Experience for Undergraduates Program, Harvard Forest

- Assisted students with forming and refining research questions, writing abstracts, and organizing final oral presentations
- Supervised tree-ring laboratory sample preparation and analysis

Dendrochronology Laboratory Instructor **Fall 2016**
Introduction to Dendrochronology, The University of Arizona, Tucson, AZ

- Facilitated guided practical lab experience in which students analyze tree-ring samples from Northern New Mexico
- Planned and taught lessons on wood anatomy features and tree-ring cross dating procedures
- Planned and executed a field sampling excursion for students to get first-hand experience with basic sampling design and increment core extraction

Co-Lecturer **Spring 2015**

Plant Taxonomy, Hanover College, Hanover, IN

- Organized and gave lectures on major tree families in Central Hardwood Region
- Taught students basic plant features for field identification
- Outlined proper herbarium sample preparation and curation

Graduate Student Team Leader **2010-2012**
Science Education for New Civic Engagements and Responsibilities (SENCER) Student Leadership Team, Indiana State University, Terre Haute, IN.
The SENCER model aims to engage students more fully in the STEM curriculum by introducing scientific concepts through hands-on learning and important civic issues.

- Organized and focused the undergraduate members of the SENCER Student Leadership Team toward the goal of spreading the SENCER teaching model around campus
- Traveled to and presented at the Summer Institute in Asheville North Carolina (Summer 2010), the Washington D.C. Symposium (April 2011), and the Summer Institute in Indianapolis Indiana (Summer 2011)
- Organized the 2010 Midwest Regional SENCER Workshop at the Indiana State Campus

Field and Laboratory Assistant **2008-2010**
Summer Science Institute, Hanover College

- Immersed high school students in ecological research through hands-on forest and stream ecology research projects
- Assisted with instruction of field methods for macroinvertebrate identification, water quality assessment, and forest health measurement.

Science Engagement Experience

Forest Ecology Laboratory Volunteer **January 2018 – Present**
Dendrochronology Representative, The Morton Arboretum
Laboratory PI: Christine Rollinson

The Future of Trees at the Morton Arboretum **April 2018**
Dendrochronology Representative, The Morton Arboretum

Student Outreach Volunteer **2012 - 2017**

Laboratory of Tree-Ring Research, The University of Arizona
Outreach coordinator: Pamela Pelletier

- Conducted tours of the laboratory facilities where visitors were introduced to the process of tree-ring analysis and its applications to fire ecology, archaeology, and climate reconstructions
- Interacted with visitors to discuss the intersection of dendrochronology, climate, ecology, and the carbon cycle

Indiana State Museum Arbor Day **Spring 2012**

Indiana State University Dendrochronology Representative

- Introduced museum visitors to the variety of trees that grow in the region, illustrated how trees monitor their environment, and discussed how trees provide a window into past environments.

Oral Presentations (* indicates presenter)

Invited Presentations

Rollinson, C.R.***, M.R. Alexander*** 2019. Trees have Secrets to Share and Stories to Tell. Riverside 150 Committee, Riverside,IL.

Alexander, M.R.* 2018. Hide and Go Seek with Eastern US Trees: Climate, Canopies, and Chronologies. The Field Museum Climate Change Forum. The Field Museum, Chicago, IL.

Alexander, M.R.* 2018. Hide and Go Seek with Eastern US Trees: Climate, Canopies, and Chronologies. The Morton Arboretum invited seminar. The Morton Arboretum, Lisle, IL.

Alexander, M.R.* 2017. Hide and Go Seek with Climate Signals in Eastern U.S. Forests. Harvard Forest Seminar. Harvard Forest, Petersham, MA.

Alexander, M.R.*, Belmecherie S.* 2016. Tree rings and the carbon cycle. Guest Lecture for Introduction to Dendrochronology. The University of Arizona.

Alexander, M.R* Co-varying influences on growth of eastern U.S. deciduous hardwood trees. Laboratory of Tree-Ring Research Spring 2016 Seminar. The University of Arizona, Tucson, AZ.

Alexander, M.R.* 2015 Predicting the Future using Tree-ring Research. American Society of Consulting Arborists Annual Meeting, Tucson, AZ.

Belmecherie S.*, **M.R. Alexander*.** 2015. The Carbon Cycle. Guest Lecture for Introduction to Dendrochronology. The University of Arizona.

Speer, J.H.*, **Alexander, M.R.***, Rosene, P.J.*, Kelley, A.*, Whitaker, J.*, Lehman, A*. 2011. Science Education for New Civic Engagements and Responsibilities (SENCER): The Indiana State University Story. Madonna University, Livonia, Michigan. October 21, 2011.

Speer, J.H.*, Whitaker, J., Pettit, J., Flowers, S., **Alexander, M.R.**, Rosene, P.J., and Kelley, K. 2011. Sustainability at Indiana State University. Madonna University, Livonia Michigan. October 21, 2011.

Speer, J.H.*, **M.R. Alexander***. 2011. Sustainability at Indiana State University. Freshman Orientation luncheon.

Alexander, M.R.* 2008. "Assessing the headwater streams within the Central Muscatatuck Watershed". Central Muscatatuck Watershed Volunteer Appreciation Luncheon.

Contributed Conference Presentations

Alexander, M.R.*, R.C. Baas, D.L. Rubino. 2019. It Takes a Village: Dendrochronological Analysis of the Wabash and Erie Canal Village in Delphi, IN. Indiana Academy of Science Annual Meeting. Indianapolis, IN.

Rollinson, C.R.*, **M.R. Alexander*,** B. Zumwalde. 2019. Using Historical Forest Dynamics to Inform Oak Management for a Resilient Future. Wild Things Conference. Chicago, IL.

Alexander, M.R.*, C.R. Rollinson, A.W. Dye, D.J.P. Moore, V. Trouet, N. Pederson. 2018. Don't forget the little guys: understory trees show dynamic climate sensitivity in Northeastern US forests. Ecological Society of America Annual Meeting.

Alexander, M.R.*, C.R. Rollinson, A.W. Dye, N. Pederson, D.J.P. Moore, V. Trouet. 2016. Stand structure and composition provide differential tree-ring growth signals in eastern U.S. forests. American Geophysical Union Fall Meeting.

Alexander, M.R.*, C.R. Rollinson, N. Pederson, V. Trouet. 2016. Covarying influences on growth of eastern U.S. deciduous hardwood trees. 3rd American Dendrochronology Conference, Mendoza, Argentina.

Speer, J.H.*, D.L. Rubino, J. Robb, **M.R. Alexander**. 2013. The Effect of Fire on Multiple Arboreal Species in the Eastern Deciduous Forest. Second American Dendrochronology Conference

Alexander, M.R.*, J.H. Speer, D.L. Rubino. 2012. Nutrient and Decay Dynamics of Coarse Woody Debris in Indiana Forests. American Association of Geographers Annual Meeting.

Speer, J.H.*, **M.R. Alexander**, A. Kelley, A. Lehman, P.J. Rosene. 2011. Implementation of the SENCER Program at Indiana State University: Assessment after Two Years. SENCER Summer Institute.

Rosene, P.J.*, **M.R. Alexander***, J.H. Speer. 2011. Assessing the Effectiveness of the SENCER Model at Indiana State University. SENCER Summer Institute, Butler University, Indianapolis, IN.

Alexander, M.R., L. Adams, A., Kelley, A. Lehman, P. Rosene, J.H., Speer, J. Whitaker. 2011. Bennett Award Presentation: The SENCER Leadership Team at Indiana State University on How to Involve Students More in Curriculum Development. SENCER Summer Institute.

Alexander, M.R.*, D.L. Rubino, C. Phillip. 2010. Residence Time of Coarse Woody Debris on the Forest Floor in Southeastern Indiana. Butler University 22nd Annual Undergraduate Research conference.

Alexander, M.R.*, D.L. Rubino. 2010. Residence Time of Coarse Woody Debris on the Forest Floor in Southeastern Indiana. Senior Bio-Day. Hanover College, Hanover, IN.

Alexander, M.R.*, D.L. Rubino. 2009. Residence Time of Coarse Woody Debris on the Forest Floor in Southeastern Indiana. Indiana Academy of Science.

Alexander, M.R.*, D.R. Karns. 2009. Assessment of headwater habitats within the Central Muscatatuck watershed, South Eastern Indiana. Butler University 21st Annual Undergraduate Research Conference.

Poster Presentations

Alexander, M.R.*, L. Brudvig, M. Midgley, C.R. Rollinson, N. Pavlovic. 2019. Not gone but often forgotten Oak ecosystem site conditions and restoration practices affect growth of mature trees. Ecological Society of America Annual Meeting. Louisville, KY.

Alexander, M.R.*, J.K.Pearl, D.A. Bishop, E.R. Cook, K.J. Anchukaitis, N. Pederson. 2018. Hide and go seek with temperature signals in Northeastern US Tree Species. American Geophysical Union Fall Meeting.

Dye, A.*, **M.R. Alexander**, E. Lee, N. Pederson, A. Hessl. 2017. Large trees are primarily driving stand biomass accumulation. Association of American Geographers Meeting. Boston, MA.

Dye, A.*, **M.R. Alexander,** D. Bishop, E. Brzostek, N. Pederson, A. Hessl. 2016. Coupling tree rings and eddy covariance to estimate long-term above and belowground carbon storage at the stand level. AGU Fall Meeting.

Montane F.*, A.M. Fox, A.F. Arellano, **M.R. Alexander**, D.J.P. Moore. 2016. A model-data intercomparison of carbon fluxes, pools, and LAI in the Community Land Model (CLM) and alternative carbon allocation schemes. AGU Fall meeting.

Dye, A.*, **M.R. Alexander,** E. Lee, N. Pederson, A. Hessl. 2016. Large trees are primarily driving stand biomass accumulation. AAG Annual Meeting

Alexander, M.R.* Where Does the Carbon Go? Turning Tree Rings into Carbon. Earth Week: Tree-Ring Day, The University of Arizona

Alexander, M.R.*, Babst, F., Moore, D.J.P., Trouet, V. 2013 Constraining the Carbon Cycle through Tree Rings: A Case Study of the Valles Caldera, NM. The American Geophysical Union Fall Meeting.

Dynes, E.*, V. Trouet, **M.R. Alexander**, D.J.P. Moore, N. Trahan. 2013. Using dendroecology to date mountain pine beetle outbreaks in northwestern Colorado. Second American Dendrochronology Conference

Alexander, **M.R.*,** D.J. Moore, V. Trouet. 2013. Informing carbon balance models with tree-ring data from a high-elevation *Pinus ponderosa* site in New Mexico. Second American Dendrochronology Conference.

Alexander, **M.R.*,** D.J.P. Moore, F. Babst, V. Trouet. 2013. Can Tree Rings be Used to Quantify the Pools and Flows of Aboveground Carbon Stocks? 4th NACP All-Investigators Meeting

Alexander, M.R.*, J.H. Speer, D.L. Rubino. 2012. Nutrient and Decay Dynamics of Coarse Woody Debris in Indiana Forests. American Association of Geographers Annual Meeting.

Alexander, M.R.*, J.H. Speer, D.L. Rubino. 2011. Analysis of elemental concentrations within coarse woody debris in relation to residence time on the forest floor in Indiana forests. American Association of Geographers Annual Meeting.

Speer, J.H.*, **M.R. Alexander***, P.J. Rosene*, J. Whitaker*, E. Mauntel, D.J. Rosene, A. Lehman, C. Dupont, L. Adams. 2011. Students Influencing Curriculum Change: The Undergraduate Leadership Team at Indiana State University. SENCER Washington D.C. Symposium.

Rosene, P.J.*, **M.R. Alexander***, Speer, J.H. 2011. Assessing the Effectiveness of the SENCER Model at Indiana State University. SENCER Washington D.C. Symposium.

Leadership

National Science Foundation Grant Reviewer **2017, 2018**
- Geography and Spatial Sciences Program

Travel Award Judge **2013**
- University of Arizona Graduate and Professional Student Council

Biogeography and Paleoenvironmental Change, Session Chair **2012**
- American Association of Geographers Annual Meeting
- New York, NY

Biogeography and Paleoenvironmental Change, Session organizer **2011**
- American Association of Geographers Annual Meeting
- Seattle, WA

Dendrochronology III, Session Chair
2011
- American Association of Geographers Annual Meeting
- Seattle, WA

Beta Beta Beta Biological Honor Society **2009**
- President, Hanover College Chapter

Professional Training and Workshops

Tableau Analyst Boot camp **2021**
Online course

Fall MORS Certificate in Excel Functions for Data Analysts **2020**
Online Course

Oak Conservation Best Practices Workshop **2019**
Cook County Forest Reserve District, Cook Co., IL

Quantitative wood anatomy workshop **2017**
Laboratory of Tree-Ring Research, The University of Arizona

Climate, Ecology, and Tree-Ring working group **2016**
Harvard Forest, Petersham, MA

The Flux Course **2013**
University of Colorado and University of Arizona, Niwot Ridge, CO

Stable Isotopes in Ecology **2013**
The University of Utah, Salt Lake City, Utah

North American Dendroecological Field Week **2012**
Jemez Springs, NM, Dendroclimatology group

North American Dendroecological Field Week **2011**
Blacksburg, VA, Wood anatomy group

Dendroecology Short Course **2011**
Laboratory of Tree-Ring Research, The University of Arizona

Honors and Awards

Graduate

Andrew Ellicott Douglass Memorial Scholarship **2017**
The Laboratory of Tree-Ring Research, The University of Arizona
Graduate Student Service Award Nominee **2017**
Laboratory of Tree-Ring Research, College of Science, The University of Arizona
Bartley P. Cardon Scholarship and Award Program **2016**
College of Agriculture and Life Sciences, The University of Arizona
Clifford W. Carstens, Jr. Scholarship **2016**
College of Agriculture and Life Sciences, The University of Arizona.
Clifford W. Carstens, Jr. Scholarship **2015**
College of Agriculture and Life Sciences, The University of Arizona
Pistor-Stanley Scholarship **2015**
College of Agriculture and Life Sciences, The University of Arizona
Clifford W. Carstens, Jr. Scholarship **2014**
College of Agriculture and Life Sciences, The University of Arizona
Galileo Circle Scholar **2014**
College of Science, The University of Arizona
Graduate Research Fellow **2012**
North American Dendroecological Field week, Climate Group
Benjamin Moulton Award **2012**
Department of Earth and Environmental Science, Indiana State University
William E. Bennett Award for Extraordinary Contributions to Citizen Science 2011
National Center for Science and Civic Engagement

Undergraduate

Dr. Enos Pray Biology Award **2010**
Department of Biology, Hanover College
Dr. Keith White Chemistry Award **2010**
Chemistry Department, Hanover College
Beta Beta Beta Biology Honor Society **2007**
Hanover College Chapter
Realizing the Dream Scholarship **2007**
Independent Colleges of Indiana, Outstanding First-Generation College Student Award

Current and Past Professional Affiliations

Harvard Forest, Harvard University, Affiliated Researcher, 2017-2020
The Morton Arboretum, Center for Tree Science, Fellow 201-2020
American Geophysical Union
Ecological Society of America
American Association of Geographers
Tree-Ring Society
Indiana Academy of Science
Beta Beta Beta Biological Honor Society